

iCAHE JC Critical Appraisal Summary

Journal Club Details

Date of submission	April 2010
Journal Club location	Cairns Public Health
JC Facilitator	Rachael Edwards
JC Discipline	Nutrition and Dietetics

Clinical Scenario

What is the impact of local, state or national food and nutrition policy interventions on the food and nutrition intake of low income Australian adults?

Review Question/PICO/PACO

- P** Adults of low socio-economic status
- I** nutritional policy interventions
- C** no interventions or educational interventions
- O** improved diet

Article/Paper

Ni Mhurchu C, Blakely T, Jiang, Y, Eyles H C, & Rodgers A. (2010). Effects of price discounts and tailored nutrition education on supermarket purchases: A randomized controlled trial. *American Journal of Clinical Nutrition*, 91(3), 736-747.

Article Methodology:	A 2 x 2 factorial randomized controlled trial
Returned JC on:	22 nd April 2010
By CAHE staff member:	Julie Luker



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Ques No.	Yes	Can't Tell	No	Comments
1	✓			<p>Did the study ask a clearly focused question?</p> <p>The study has a clearly focused question.</p> <p>The objectives of the study were to evaluate the effect of price discounts and tailored nutritional education, separately and in combination, on supermarket food and nutrient purchases.</p> <p>Outcomes examined were change from baseline in</p> <ul style="list-style-type: none"> Percentage energy from saturated fat contained in supermarket food purchases (at 6 months post-intervention) saturated fat (at 12 months post-intervention) other nutrients at 6 and 12 months post-intervention: percentage energy from total fat, protein & carbohydrate; energy density; sodium; sugars. Changes in quantities by weight of healthier foods purchased: cereals 7 cereal products, fats & oils, fruit & vegetables, meat 7 meat alternatives, milk & milk products.
2	✓			<p>Was this a randomized controlled and was it appropriately so?</p> <p>This study was a 2 x 2 randomised controlled trial with 4 intervention arms which was an appropriate approach to address the research question.</p> <p>Is it worth continuing with the appraisal? YES</p>
3	✓			<p>Were participants appropriately allocated to intervention and control groups?</p> <p>The study reported that participants were randomly allocated to either the 3 intervention groups or control group. The method of computer-generated block randomisation was described and is appropriate. It allowed for stratification by ethnicity and household income to ensure that there were comparative samples within each group.</p> <p>Based on baseline demographic data in Table 1, the 4 groups appear to be similar, however this data was not analysed statistically for significant differences.</p>
4			✓	<p>Were participants, staff and study personnel blind to participants' study group?</p> <p>Participants were not blinded to group allocation- they would have been aware of the intervention they received. It does not appear that the people collecting outcomes data were blinded either.</p>

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5			<p>Were all the participants who entered the trial accounted for at its conclusion?</p> <p>Numbers of participants from each group who were lost to follow-up were reported and were included in some final analysis (Figure 1 and Table 1). When participants' outcomes were analysed by the groups that they were originally allocated to, data from the participants who were lost to follow-up was not included (Table 3). However the authors state (pg 738) that "All randomly assigned participants were included in an intention-to-treat analysis on the assumption that data were missing at random".</p> <p>There does not appear to be any unintended contamination of interventions between groups.</p>
6	✓	✓	<p>Were the participants in all groups followed up and data collected in the same way?</p> <p>Participants in both groups (apart from drop-outs) were followed up and data collected in the same way and at the same time periods.</p> <p>NOTE: In the discussion the authors admit that many participants purchased food from a number of food outlets (not just the data collection outlets), and so the data collected and analysed is for only a portion of participants' food purchases. Information on additional food purchases was not available and may or may not have varied considerably between groups – we just don't know.</p>
7			<p>Did the study have enough participants to minimize the play of chance?</p> <p>There was a power calculation carried out which showed that they would need 300 participants in each intervention arm to have sufficient statistical power. Final numbers fell below this which may have affected the study's ability to demonstrate greater statistical significance.</p>
8			<p>How are the results presented and what is the main result?</p> <p>In Table 2 the effect of price discounts and tailored nutrition education were presented as mean changes from baseline in nutrient and food purchases. Results had been adjusted for baseline food purchase, ethnicity, income, age and sex. P-values were given to show within-group and between-group differences.</p> <p>In Table 3 the unadjusted absolute change in nutrient and food purchases was compared across the 4 groups and presented as mean purchases and standard deviations, plus mean change from baseline. Model adjusted means and 95% confidence intervals (CI) and <i>p</i> values were reported in the text.</p> <p>Bottom Line Result: Participants who received price discounting purchased more predefined healthier foods at 6 months post-intervention, than participants who received education or no intervention. Neither price discounting nor education had a significant effect on nutrients purchased.</p>

9			<p>How precise are the results?</p> <p>Within group and between-group differences were analysed and reported precisely as means, 95% confidence intervals (CI) and <i>p</i> values. The precise CIs reported give us confidence in the results that price discounting increased purchasing of all healthier products, healthier cereals, healthier meat/meat products and healthier milk/milk products.</p>
10			<p>Were all important outcomes considered so the results can be applied?</p> <p>Your group should discuss how your setting and population may differ from that used in this study.</p> <p>Consider whether reported benefit outweighs any harm and/or cost.</p> <p>The costs of the intervention were not considered by this study. Further studies are needed to calculate cost-benefits of a price discounting intervention ie how much price discounting investment would be needed to break-even or save \$\$ for the health system?</p> <p>Consider whether policy should change as a result of the evidence contained in this study.</p> <p>The current study was not powered sufficiently to be able to direct change at a policy level. Larger studies which include cost-benefit analysis are required.</p>

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